

REMARKS

STATUS OF THE CLAIMS

Claims 1-26 have been pending in the application.

Claim 15 is objected to for containing a negative limitation.

Claims 1-26 were rejected under 35 U.S.C. § 102(e) as being anticipated by Nolan et al. (Nolan 6,640,278).

Claims 2-3, 15 and 8 appear to be rejected over Nolan and Blumenau (US Patent No. 6,421,711).

Claim 20 is amended, new claim 27 is added, and, thus, claims 1-27 remain pending for reconsideration, which is respectfully requested.

No new matter has been added.

CLAIM OBJECTION

Claim 15 is objected to for containing a negative limitation. The Office Action alleges that claim 15 might not have basis in the original disclosure. However, independent claim 15 is an originally filed claim, and, thus, because claims are part of the specification, there would be a basis for the limitations of claim 15 according to 35 USC 112, first paragraph, written description requirement. See MPEP 608.01(I). Further, for example, the paragraph spanning pages 26-27 (e.g., page 27, lines 5-7) expressly provides support for independent claim 15 ("when the system is started up and the access path information has not been set up"). It is readily apparent that the specification expressly provides a basis for independent claim 15 and withdrawal of the objection is respectfully requested.

CLAIM REJECTIONS

Claims 1-26 are rejected under 35 USC 102(e) as being anticipated by Nolan (US Patent No. 6,640,278). Nolan is newly cited, and, thus, newly relied upon.

Claims 2-3, 15 and 8 appear to be rejected over Nolan and Blumenau (US Patent No. 6,421,711).

The rejections are traversed as follows:

The independent claims are 1, 4, 5, 6, 7, 8, 9, 15, 16, 17 and 20.

Nolan discusses a storage area network (SAN) server by referring to 1200 (FIG. 1), 1250 (FIG. 2), 1300-1302 (FIG. 3) and 102 (FIGS. 4-6), which discuss a block diagram, functional components, and hardware architecture, of Nolan's storage area network (SAN) server. The Office Action appears to allege that Nolan's SAN server 1200, 1250, 1300, 102 is similar to the claimed present invention's, "***integrated management mechanism***" 1 (FIG. 1 of the present Application).

However, Nolan teaches away from the claimed present invention, because Nolan incorporates storage management mechanisms 4a and host SAN management mechanisms 2a (see FIG. 1 of the present Application, 4a, 2a) in Nolan's FIG. 1 SAN server 1200 (1250), 1300, 102 (see FIG. 1 of Nolan). In contrast to Nolan, the claimed present invention as generally recited in the independent claims 1, 4, 7, 8, 9, 15, 16, and 17, using claim 1 as an example, provides an "***integrated management mechanism***" 1, 500 (FIGS. 1-3 of the present Application) that manages the following operations:

- 1) "***transmitting access management information*** to the storage devices and to the storage area network management mechanisms of the host computers,"
- 2) "***transmitting region information*** to a switch region-setting mechanism," and
- 3) "***transmitting access restriction information*** concerning the host computers to the storage management mechanisms of the storage devices" (e.g., independent claim 1).

In other words, Nolan teaches away from the claimed present invention, because Nolan's SAN server 1200 (1250), 1300, 102, in a central location manages local configuration data ***and directs storage transactions*** ("***The storage server 1200*** is able to ***direct storage***

transactions using local configuration data, and simplify the management of storage for the client servers.” - column 5, lines 26-29, column 5, lines 55-61), which differs from the claimed present invention’s SAN where an integrated management mechanism 1, 500 manages **and transmits SAN configuration information to the host 2, switch 3 and devices (e.g., device 4)**. It is readily apparent that Nolan’s SAN server 1200, 1250, 1300, 102 does not transmit configuration information to clients, switches and devices in the SAN, because Nolan’s SAN server 1200, 1250, 1300, 102 centrally manages local configuration data and **directs storage transactions**. Nolan’s column 5, lines 2-61 discuss, “A storage server 1200, according to the present invention, in preferred embodiments provides on-chassis data storage, storage transaction cache service, storage routing and virtual device management ... The **storage server 1200** is able to **direct storage transactions using local configuration data**, and simplify the management of storage for the client servers.”

According to the claimed present invention, an “**integrated management mechanism**” 1, 500 can be implemented as a separate server function and/or apparatus (e.g., independent claims 1, 7, 8, 9, 15, 16, and 17) and/or in each host 2 (e.g., independent claim 4), to integrate and control by “**transmitting access management information** to the storage devices and to the storage area network management mechanisms of the host computers,” to integrate and control by “**transmitting region information** to a switch region-setting mechanism,” and to integrate and control by “**transmitting access restriction information** concerning the host computers to the storage management mechanisms of the storage devices” (e.g., independent claim 1). “. Independent claims 5 and 6 are directed to a “switch” and a “storage device” integrated and controlled by the claimed present invention’s, “**integrated management mechanism**” 1, 500.

In rejecting independent claim 1, the Office Action in page 5 relies on Nolan’s column 17, lines 30-45, for discussing the claimed present invention’s “**transmitting access management information to the storage devices**.” However, Nolan’s column 17 describes FIG. 15, which is “a heuristic diagram of redundant virtual circuits implemented by data paths including a plurality of driver modules” (column 16, lines 43-45). Nolan’s column 17, lines 30-36, discusses, “The unique device identifiers are used to support the configuration logic based on tables in a configuration database managed by the storage server, and controlled by local configurable logic in the storage server.” Therefore, this Nolan discussion relates to implementing a virtual circuit

in Nolan's SAN server 1200, 1250, 1300, 102. However, Nolan fails to disclose or suggest that the SAN server 102 transmits its configuration database to storage devices. See, Nolan, column 17, line 36 to column 23, line 21.

In rejecting claim 1, the Office Action in page 5 also relies on Nolan, column 34, lines 40-55 for allegedly discussing the claimed present invention's, "**transmitting region information** to a switch region-setting mechanism." However, Nolan's column 34, lines 40-55 discusses, "Clearly, the ability to define secure zones, or storage "domains", is one aspect of a storage domain manager." It is readily apparent that Nolan provides storage domain management in a central location and fails to disclose or suggest the claimed present invention's, "**transmitting region information to a switch region-setting mechanism**" in a SAN, because Nolan's SAN server 1200, 1250, 1300, 102 centrally handles storage transactions, such that there is no need to "**transmitting region information**" to "**a switch region-setting mechanism**" in a SAN.

In rejecting claim 1, the Office Action in page 6, lines 1-2, also relies on Nolan, column 27, lines 12-18 for allegedly discussing the claimed present invention's, "**transmitting access restriction information** concerning the host computers to the storage management mechanisms of the storage devices." However, Nolan's column 27, lines 12-18 discusses, "The use of cache is restricted to "on" or "off," using the check box 1607 of FIG. 24. Alternative systems provide tools for specification of cache size or cache algorithm. The cache use can be turned on or off on the fly without interrupting the flow of data along the virtual circuit. The default when a LUN is created will be "on"." It is readily apparent that cache use restriction differs from the claimed present invention's, "transmitting **access restriction information concerning the host computers to the storage management mechanisms of the storage devices.**" Further, Nolan fails to disclose or suggest, "**transmitting** access restriction information."

Independent claim 20 is amended for clarity as follows:

20. (CURRENTLY AMENDED) A method of integrating and controlling a storage area network system, comprising:
managing, including receiving and/or transmitting,
~~integrating and controlling the storage area network by an~~
 integrated management mechanism, ~~managing~~access
 relationships between host computers of the storage area network
 and storage devices of the storage area network, wherein a switch
connects the host computers and the storage devices.

In contrast to Nolan and Blumenau, the claimed present invention as recited in amended independent claim 20 provides, "managing, including receiving and/or transmitting, integrating and controlling the storage area network by **an integrated management mechanism**, managing **access relationships** between host computers of the storage area network and storage devices of the storage area network, wherein a switch connects the host computers and the storage devices."

In contrast to Nolan and Blumenau, a new dependent claim 27 provides:

27. (NEW) The method of claim 20, wherein the access relationships comprises one or more of **access route management information** for the storage devices and for the host computers, **region information** for the switch, or **access restriction information** for the host computers and for the storage devices.

Support for the claim amendments and new dependent claim 27 can be found, for example, in page 6, line 16 to page 9, line 22 of the present Application.

In view of the remarks and claim amendments, withdrawal of the rejections of pending claims and allowance of pending claims is respectfully requested.


CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

Respectfully submitted,
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